US ARMY
PEO EIS
PEO Enterprise Information Systems

Network Modernization - SATCOM

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The PM DCATS Universe

MISSON: Enable information dominance for the Army, Department of Defense, National Command Authority, and International Partners by acquiring, implementing, and sustaining strategic satellite and terrestrial communications, and leading technologies to meet current and future requirements

VISION: Be the best project management professionals and subject matter experts that deliver the most efficient and effective products and services within our core competencies.

A diverse portfolio of over 30 strategic satellite and terrestrial communications systems

PM DCATS Major SATCOM Components

Tech Control

DISN

Carrier
Multiplexers
Routers
• Aggregation
•Serial to Packet
•Transport
Digital Cross connect
Encryption

Baseband

Modems
Satellite Mux
TRANSEC/Crypto
IP Convergence
Routers

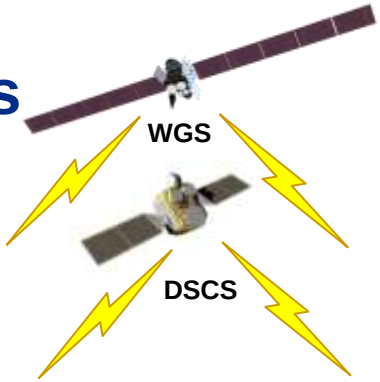
Inter-Facility Link

Digital

Analog

L-Band SW (MET)
Combiner

Terminals

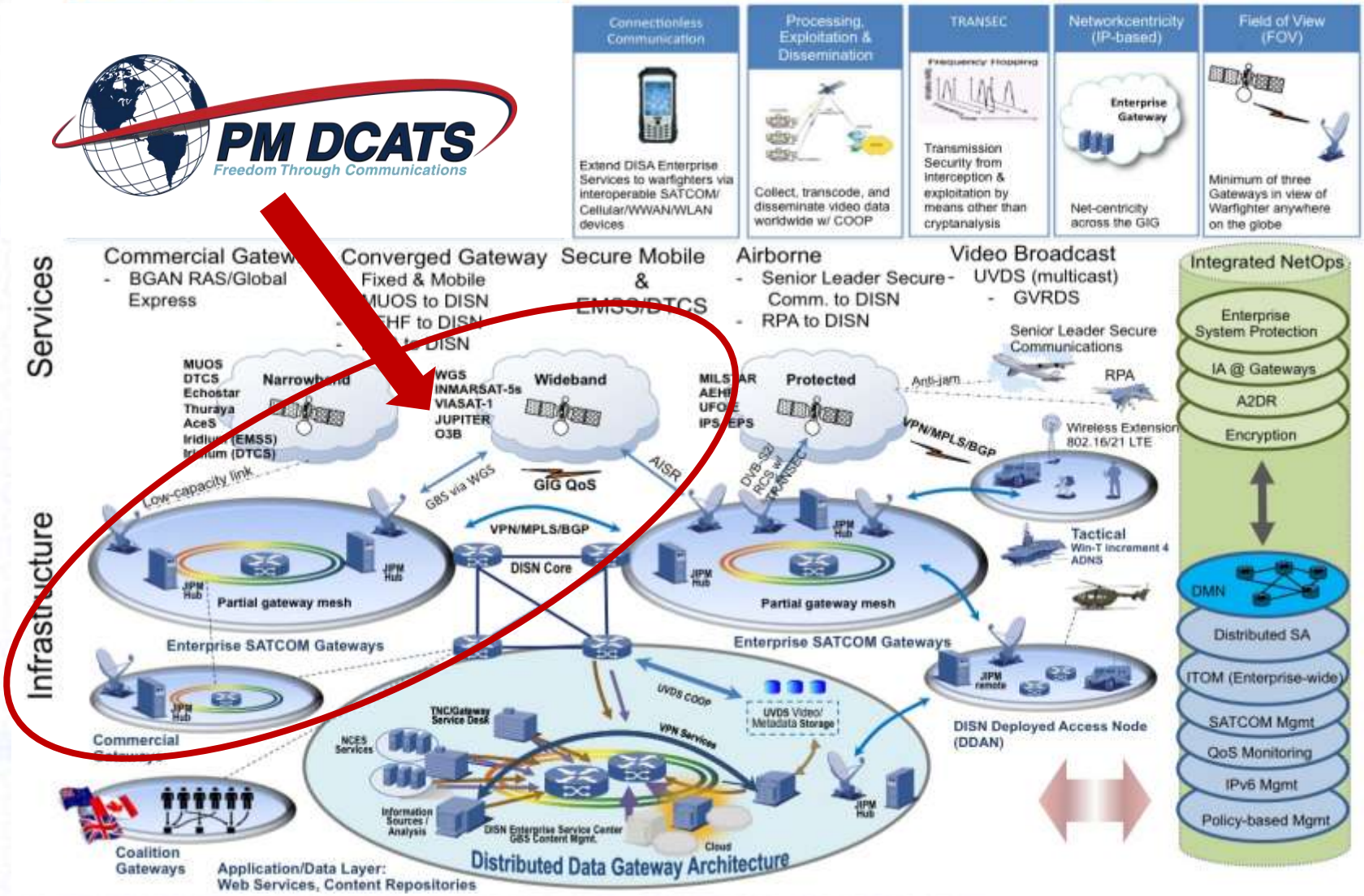


MET
AN/GSC-52
AN/GSC-39
AN/FSC-78
AN/GSC-70
Block UP/DOWN
Converters

Wideband Control

21 Subsystems performing:
- Planning
- Spectrum Management
- Link Management
- Payload Control

DISA Objective Architecture



Joint Information Environment – POA&M

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FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
SHAPE	NORMALIZE		OPTIMIZE			SUSTAIN

JIE – Inc 1
- Conduct BCA and site survey
- Develop implementation plan

Data Center Consolidation
- Publish data center standards
- Close 69 data centers
- Designate 5 core data centers

Network Normalization
- Implement security architecture
- Consolidate service desks
- Define Single Security Architecture
- Define minimum SATCOM Worldwide Enterprise Gateway requirement
- Publish Tactical Terminal Convergence Plan

Enterprise Services
- Initial Standard Records Management process
- Enterprise Portal subsumes DKO/AKO
- Cross Domain IOC

Identity and Access Mngt
- Initial Data Tagging & enhanced person ID
- Enterprise E-mail Directory Service

JIE – Inc 2
- Conduct BCA and site survey
- Develop implementation plan
- Regional or global focus to be defined by BCA

Data Center Consolidation
- Establish 5 more core data centers
- Initial Tactical Data Centers

Network Normalization
- Continue Inc 1 initiatives
- Converge 16 or 44 SATCOM Gateways
- Eliminate 3 Tactical Terminals

Enterprise Services
- Continue Inc 1 initiatives
- Start phase out of point-to-point cross domain solutions

Identity and Access Mngt
- Continue Inc 1 initiatives

JIE – Inc 3

Data Centers Consolidation
- 10 more core data centers
- Final Tactical Data Centers

Network Normalization
- Continue Inc 2 initiatives
- Consolidate Commercial Ka at Enterprise Gateways

Enterprise Services
- Renew Cloud E-Mail Contract
- Complete Enterprise Portal
- Initial Unified Capabilities

Identity and Access Mngt
- Credentialing and authentication services

Data Center Consolidation
- Fully franchised DoD Cloud w/50% services cloud enabled

Network Normalization
- Continue Inc 2 initiatives
- Implement Digital-IF at Enterprise Gateways

Enterprise Services
- Unified Capabilities – phase out legacy switches
- Complete Enterprise E-mail
- Complete point-to-point Cross Domain solutions phase out

Identity and Access Mngt
- Continue Inc 3 initiatives

Data Center Consolidation
- Sustain

Network Normalization
- Sustain

Enterprise Services
- Unified Capabilities
- Services cloud enabled

Identity and Access Mngt
- Sustain

Initial Focus on Big Rocks
- Network Normalization
- Data Center Consolidation
- Identity and Access Management
- Enterprise Services
- Governance

JIE Inc. 1 → JIE Inc. 2 → JIE Inc. 3 → JIE Inc. 4 → JIE Inc. *n*

*** Note: Level of Programmatic, Execution and Operational Risks are captured and mitigated as implementation occurs**

Limited	Operational Flexibility	Maximized	Mission Effectiveness
Undefendable	Cyber Security	Defendable	Increased Security
Disparate MilDep Plans	Services to JIE	DoD JIE	IT Efficiencies

Wideband MILSATCOM

- Each new Wideband Global Satellite (WGS):
  - Has more capacity than 10 DSCS satellites
  - Adds high capacity Ka band
  - Has a digital channelizer to route beam to beam or beam to multiple beams
  - Supports new missions (e.g. COTM and AISR)
- Currently four WGS are on orbit with six more on contract
- PM DCATS provides terminals and baseband anchoring the WGS
- PM DCATS provides the payload control systems for WGS along with planning tools, spectrum monitoring tools and RF link management equipment

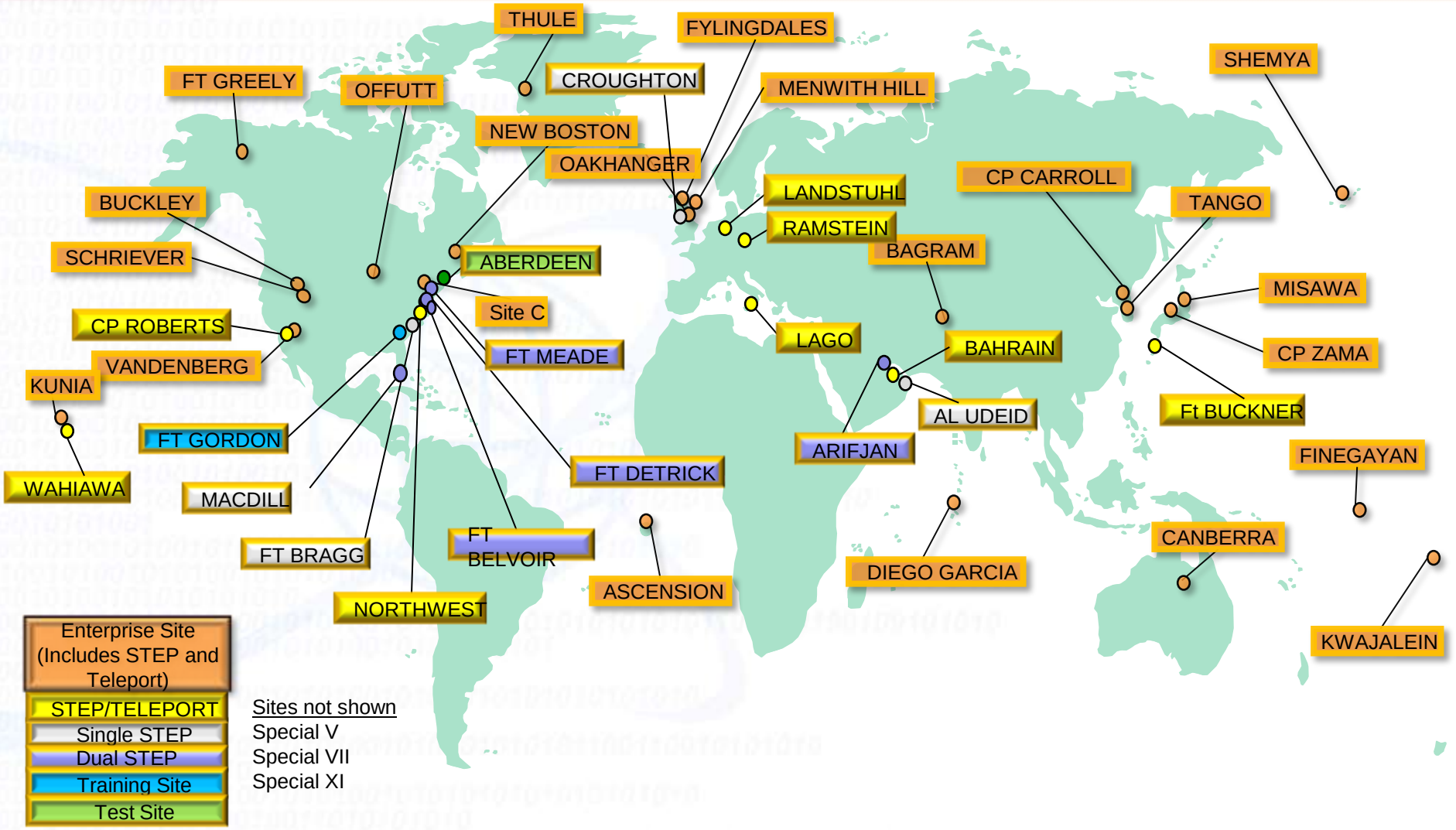
Where We Are Going

- Migrating from primarily trunk based FDMA to:
  - Everything over IP using Multi-Frequency Time Division Multiple Access (MFTDMA) technologies
    - Net Centric Waveform (NCW)
    - Joint IP Modem (JIPM)
    - Enhanced Bandwidth Efficient Modem (EBEM) with Ethernet Service Extension Module (ESEM)
  - Eliminating Multiplexers
  - Use MPLS convergence routers to allow selection of alternate SATCOM paths
  - Open up traditionally closed Wideband MILSATCOM transport to better facilitate end-to-end NetOps management
  - Integrated Management for Terminal and Baseband providing situational awareness

Next Big Thing in SATCOM

- Digital Intermediate Frequency (IF)
  - Allow SATCOM modems to exist entirely in the digital domain
  - Eliminates banks of SATCOM modems at Gateway sites
  - Allows all Gateway sites to function the same (no distinction between STEP, Teleport or Gateway other than terminal type)
  - Allows hardware location independence and multi-site continuous COOP
  - Worldwide remote management and control
- Currently teaming on Digital IF Working Group with eight DoD stakeholders including DISA, AF and S&TCD
- Do a tech insertion into the MET and Baseband programs when the technology reaches TRL 7

Enterprise Gateway Locations



Tech Control Modernization

- Primary purpose of a Tech Control Facility is to aggregate circuits on an Army installation, ensuring secure and reliable transport via the Wide Area Network (WAN)

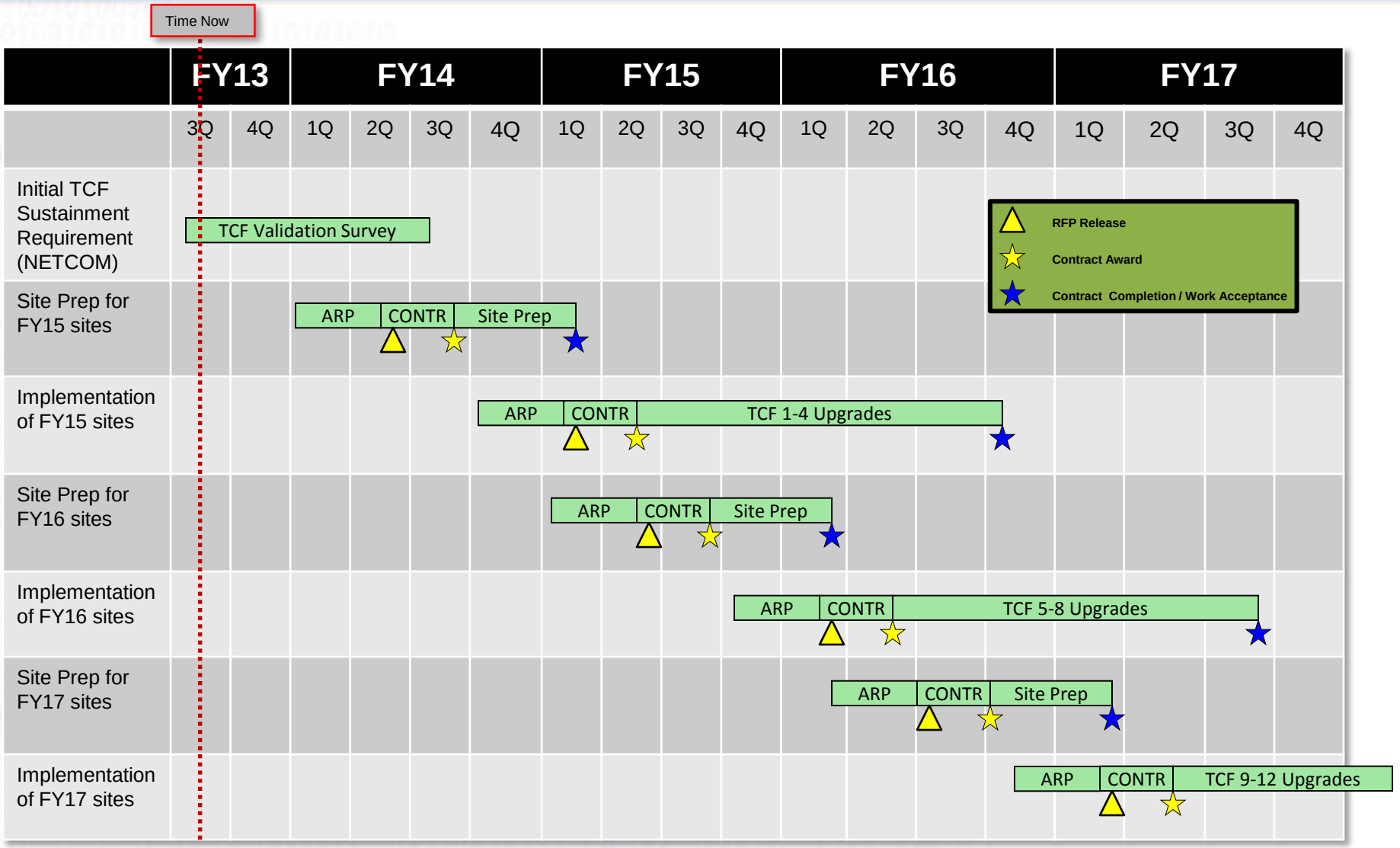
- Provides Situational Awareness
  - Circuit/trunk status
  - Control, Monitor and Alarm (CMA) for both network and facilities systems
  - Circuit/trunk restoration

- Provides Operational Control
  - Establish, terminate , reconfigure and reroute circuits/trucks

- Interface between users and the WAN
  - Protocol translation
  - Backhaul to users

- Ongoing modernization projects support UC migration strategy to IP by employing
  - Serial To Packet technology
  - Class and Quality of Service – Design ongoing in coordination with DISA

TCF Tech Refresh Strategy



Summary

- We are in the process of migrating to everything over IP from our trunk/multiplexer based SATCOM systems
- The fabric of our entire satellite Gateway architecture is becoming IP centric itself better promoting any to any communications without restrictions
- We are planning to upgrade our core Tech Control Facilities beginning FY15 to better serve within the JIE construct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